



## **Air Quality Permitting Statement of Basis**

**January 9, 2008**

**Permit to Construct and Tier II Operating Permit  
No. T2-2007.0228**

**Foam Molders, Inc., Post Falls**

**Facility ID No. 055-00047**

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**PROPOSED FOR PUBLIC COMMENT**

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## Acronyms, Units, and Chemical Nomenclature

AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
BACT	Best Available Control Technology
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	Environmental Protection Agency
EPS	expandable polystyrene
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MMBtu/hr	Million British thermal units per hour
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO <sub>x</sub>	nitrogen oxides
NSPS	New Source Performance Standards
O <sub>3</sub>	ozone
PM	Particulate Matter
PM <sub>10</sub>	Particulate Matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	Permit to Construct
PTC/T2	permit to construct and Tier II operating permit
Rules	Rules for the Control of Air Pollution in Idaho
SIC	Standard Industrial Classification
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor with emissions limited to 80% or more of major source threshold
SO <sub>2</sub>	sulfur dioxide
T/yr	Tons per year
UTM	Universal Transverse Mercator
VOC	volatile organic compound

## 1. PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 201 and 404.04, Rules for the Control of Air Pollution in Idaho (Rules) for Permits to Construct and Tier II operating permits.

## 2. FACILITY DESCRIPTION

The Expandable Polystyrene (EPS) raw materials, or beads, come into the facility in 1,000-pound lined Gaylord boxes. The beads contain an encapsulated blowing agent, pentane, which is usually 3.5 to 6.5% of the material by weight. The emission rates at each phase of the operation vary according to such factors as the density of the expanded beads, the shape and size of the molded parts, and finished goods storage requirements. The beads are typically vacuum fed from the Gaylord boxes to the pre-expanders where the beads are partially expanded to their desired density (referred to as pre-puff).

Approximately 25% of the encapsulated pentane is released in the expansion process. The expanded beads are then aged from 2 to 48 hours to allow the pre-puff to stabilize by diffusing air into the expanded beads. Approximately 20% of the initial pentane is released during this aging process. These materials are then transferred directly to the molds where, with use of steam, they are fused together into the desired shapes created by the mold forms. Approximately 15-25% of the initial pentane is released during the molding process. In the post-molding phase, approximately 15% of the initial pentane is released in the first 24 hours, and approximately 10% in the next 24 hours. The remaining 15% pentane diffuses out of the product over a long period of time.

## 3. FACILITY / AREA CLASSIFICATION

Foam Molders, Inc. (Foam Molders) is defined as a synthetic minor facility because without permit limits on the potential to emit, VOC emissions would exceed 100 tons per year. The AIRS classification is "SM80" because the potential to emit is limited to between 80% and less than 100% of the criteria air pollutant major source threshold.

The facility is located within AQCR 62 and UTM zone 11. The facility is located in Kootenai County which is designated as unclassifiable for all criteria pollutants (PM<sub>10</sub>, CO, NO<sub>x</sub>, SO<sub>2</sub>, lead, and ozone).

The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at Foam Molders. This required information is entered into the EPA AIRS database.

## 4. APPLICATION SCOPE

This permit action is to renew Tier II Operating Permit and Permit to Construct No. P-060109, issued June 9, 2006, without modifications.

### 4.1 *Application Chronology*

December 7, 2007	DEQ receives Tier II operating permit renewal application
December 18, 2007	DEQ issues completeness letter
December 18, 2007	DEQ receives e-mail from facility requesting a draft permit
December 26, 2007	DEQ issues facility draft permit
December 26, 2007	DEQ receives comment from facility
December 28, 2007	DEQ receives comments from Coeur d'Alene Regional Office

## 5. PERMIT ANALYSIS

This section of the Statement of Basis describes the regulatory requirements for this permit to construct and Tier II operating permit (PTC/T2).

### 5.1 Equipment Listing

#### Boiler A

Manufacturer: Superior

Model: 6-750

Rated heat capacity: 6.3 MMBtu/hr

Construction Date: 1996

Burner type: Horizontally fired

Stack diameter: 14 inches

Stack height: 32 feet

Fuel: Natural gas

#### Processing equipment

Pre-expanders

Molds

### 5.2 Emissions Inventory

#### EMISSIONS INVENTORY BASED ON PTE

Foam Molders Inc., Post Falls										
Potential Emissions <sup>a</sup> – Hourly (lb/hr), and Annual (T/yr)										
Source Description	PM <sub>10</sub>		NO <sub>x</sub>		CO		VOC		SO <sub>2</sub>	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr <sup>b</sup>	T/yr
Boiler, Superior, 6.32 MMBtu/hr natural gas	0.05	0.20	0.60	2.63	0.50	2.21	0.03	0.14	0.004	0.02
Process Equipment	---	---	---	---	---	---	119	95.2	---	---
<b>Total</b>	0.05	0.20	0.60	2.63	0.50	2.21	119	95.34	0.004	0.02

<sup>a</sup> As determined by a pollutant-specific U.S. EPA reference method, a Department-approved alternative, or as determined by the Department's emissions estimation methods used in this permit analysis.

<sup>b</sup> The permit renewal application shows that SO<sub>2</sub> emissions from the boiler are 0.01 lb/hr, but this is a rounded value. The more accurate estimate is 0.004 lb/hr based on AP-42 and the boiler rating.

### 5.3 Modeling

No modeling is required for this permit because there is no emissions increase.

### 5.4 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this PTC/T2.

IDAPA 58.01.01.404.04.....Permit Revision or Renewal

This Tier II operating permit is being renewed in accordance with the requirements of this section.

40 CFR 60 .....Standards of Performance for Small Industrial Commercial Institutional Steam Generating Units

Foam Molder's steam boiler is 6.3 MMBtu/hr, which is less than the 10 MMBtu/hr or lower applicability limit for steam-generating units per 40 CFR 60 Subpart Dc.

40 CFR 63 .....National Emissions Standards for Hazardous Air Pollutants

Because the EPS beads are used but not manufactured at Foam Molders, 40 CFR 63 Subpart JJJ does not apply.

## 5.5 Fee Review

In accordance with IDAPA 58.01.01.407.01, a Tier II operating permit processing fee of \$10,000 is required to be paid to the Department because the source is a synthetic minor stationary source with permitted emissions of VOC below the major threshold level of 100 tons per year.

**Table 5.1 Tier II Processing Fee Summary**

Emissions Inventory	
Pollutant	Permitted Emissions (tons per year)
NO <sub>x</sub>	2.63
SO <sub>2</sub>	0.02
CO	2.21
PM <sub>10</sub>	0.2
VOC	95.34
TAPS/HAPS	95
Total:	100.4
Fee Due	<b>\$ 10,000.00</b>

## 6. PERMIT CONDITIONS

The excess emissions and the expiration and renewal facility-wide conditions were relocated to the General Provisions section of the permit.

As suggested by the DEQ Coeur d'Alene Regional Office, a permit condition was added as follows in order to clarify that natural gas is the only fuel that is allowed to be used in the boiler:

*“Natural gas exclusively shall be combusted in the boiler.”*

No other changes were made to the Tier II permit conditions.

## 7. PERMIT REVIEW

### 7.1 Regional Review of Draft Permit

DEQ provided a draft permit to the Coeur d'Alene Regional Office on December 26, 2007 for its review. Comments were submitted on December 28, 2007. The comments were addressed.

## **7.2 Facility Review of Draft Permit**

DEQ provided a draft permit to the facility on December 26, 2007 for its review. A comment was submitted on December 26, 2007 regarding the processing fee. The comment was resolved.

## **7.3 Public Comment**

An opportunity for public comment period on the PTC/T2 application is being provided in accordance with IDAPA 58.01.01.404.04.

## **8. RECOMMENDATION**

Based on review of application materials, and all applicable state and federal rules and regulations, staff recommend that Foam Molders, Inc. be issued proposed PTC and Tier II Operating Permit No. T2 - 2007.0228 for the renewal of the permit.

CZ                      Permit No. T2-2007.0228

## **APPENDIX A – AIRS INFORMATION**



# AIRS/AFS<sup>a</sup> FACILITY-WIDE CLASSIFICATION<sup>b</sup> DATA ENTRY FORM

**Facility Name:** Foam Molders, Inc.  
**Facility Location:** 9456 N. McGuire Road  
**AIRS Number:** 055-00047

AIR PROGRAM POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	SM80	TITLE V	AREA CLASSIFICATION A-Attainment U-Unclassified N- Nonattainment
SO <sub>2</sub>	B							U
NO <sub>x</sub>	B							U
CO	B							U
PM <sub>10</sub>	B							U
PT (Particulate)	B							
VOC	SM					SM80		
THAP (Total HAPs)	B							
APPLICABLE SUBPART								

<sup>a</sup> Aerometric Information Retrieval System (AIRS) Facility Subsystem (AFS)

<sup>b</sup> AIRS/AFS Classification Codes:

- A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For HAPs only, class “A” is applied to each pollutant which is at or above the 10 T/yr threshold, **or** each pollutant that is below the 10 T/yr threshold, but contributes to a plant total in excess of 25 T/yr of all HAPs.
- SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.
- B = Actual and potential emissions below all applicable major source thresholds.
- C = Class is unknown.
- ND = Major source thresholds are not defined (e.g., radionuclides).